Performance Measurements Utilizations Among Iranian and Portuguese Manufacturing Organizations: Similarities and Differences

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This study compares the extent of utilization of five performance dimensions in the manufacturing organizations in Iran and Portugal. These dimensions include Financial, Product Quality and Customer Satisfaction, Quality and Independence of Management, Human Resource Management, and Social Responsibility. Results show that while there are some similarities among the two groups of participants in the two countries, there are major differences. These differences are particularly evident in the ranking of the performance measures, which could be attributed to the differences in the business culture. The similarities, however, might be linked to the global nature of doing business, which is competition-driven.

INTRODUCTION

The topic of performance measures is gaining in significance due to the increasing demands placed on today's organization by the increasingly sophistication of global customers. In this context, to ensure competitiveness, these organizations are finding it a necessity rather than a luxury to gauge and improve the different aspects of their organizational performance.

While operational performance has received most of the attention with regard to performance measurement that has not been the case for other aspects of the softer or human related organizational performance aspects. This might be attributed to the traditional view of performance which emphasized more operational efficiency. Also, it could have been attributed to the ease of quantifying operational performance relative to the other aspects of organizational performance. Nowadays regardless of the business culture, gauging and improving organizational performance is becoming essential to survival in the global market. In this context, while business culture is still an important facet in shaping business practices, global customers are increasingly redefining the competitive rules of business survival.

Against this backdrop, the current study attempts to shed some light on the extent of utilization of some key human aspects of organizational performance in two unique cultures. Iran and Portugal have some similarities with regards to their economic constraints. However, these economic constraints are attributed to different reasons in these two countries. As business cultures, Iran and Portugal have some

similarities in the form of the role of religion and tradition. Despite some of these apparent similarities, they are different, especially in terms of their openness and integration into the global economy.

Motivated by the above, this study attempts to explore three research questions. The research questions of this exploratory study are stated below.

1. Are there any differences between Portuguese and Iranian manufacturing organizations with regard to the extent of utilization of softer human related performance measures? The weight and rank given to a certain performance measure will be explored to detect significant differences among executives from these two business cultures.
2. To what extent are different performance dimensions utilized in these two business cultures linked to the utilization of the financial dimension by the two groups of participants studied.
3. To what extent are the different performance dimensions utilized linked to the utilization of the competitive environmental dimension by the two groups of participants studied?

While this study is exploratory in nature, it has the potential to contribute to our understanding of performance measures and measurement in different business cultures. This in turn might lead to a better theoretical framework which might lend themselves to the practical advancement of the performance management art.

RELEVANT LITERATURE

During the 1980s, scholars and practitioners advocated drastic changes in the way that organizational performance was measured and managed. Due to mounting criticism of financial indicators, as promoters of short-term thinking and barriers to strategic innovations (Banks & Wheelwright, 1979; Hayes & Garvin, 1982; Kaplan, 1983), the literature began to stress the utility of non-financial measures, as well as the need to balance and integrate the different performance dimensions (Johnson & Kaplan, 1987; McNair & Mosconi, 1987; Santori & Anderson, 1987). The decade of the 1980s ended with the appearance of the first two performance measurement systems (PMS), namely the SMART (Cross & Lynch, 1988; Lynch & Cross, 1991), and the Performance Measurement Matrix (Keegan, Eiler, & Jones, 1989).

In the 1990s, several PMS, universal models, and approaches were proposed to promote general frameworks, which can be extended to different organizations and operating environments. Among the most widely cited of these frameworks are: the Performance Measurement Questionnaire (Dixon, Nanni, & Vollmann, 1990), the Performance Measurement Model in Service Business (Brignall, Fitzgerald, Johnston, & Silvestro, 1991), the Balanced Scorecard (Kaplan & Norton, 1992), and the Integrated Dynamic Performance Measurement System (Ghalayini, Noble, & Crowe, 1997).

During this period, some authors focused more on the intrinsic characteristic of each organization. Thus, they tended to stress the design and implementation aspects of a PMS, rather than the general utility of a given PMS, across different organizations (Beamon, 1999; Dixon et al., 1990; Eccles & Pyburn, 1992; Flapper, Fortuin, & Stoop, 1996; Neely et al., 1996; Waggoner, Neely, & Kennerley, 1999). Reflecting this case-by-case approach to PMS, the Performance Prism was presented with a prevalent focus on both stakeholder satisfaction and contribution (Adams & Neely, 2002; Neely, Adams, & Crowe, 2001).

The dramatic environmental and market changes, in the first decade of the 21st century, left unmistakable marks on the performance measurement literature. This, in turn, emphasized the need to approach the management of performance literature from a more open systems perspective. Such perspective has a clear market/customer focus. Such focus should capture the dynamic nature of the market and environment and should incorporate them into the performance measurement system (Neely, 2005; Pun & White, 2005; Shepherd & Gunter, 2006). This organizational orientation should be used at redirecting the scope from performance measurement to performance management (Neely, 2005). In this context, Information systems and technology should be facilitators of the performance measurement and

management process (Gomes, Yasin, & Lisboa, 2007; Gunasekaran, Patel, & Tirtiroglu, 2001; Marchand & Raymond, 2008).

In order to change the organizational culture to become more stakeholder-oriented approach the Performance Measurement Systems one should take into consideration the human factor, including new and innovative incentive/reward systems, and their links to performance measurement in order to involve employees in the performance measurement process (Berry, Coad, Harris, Otley, & Stringer, 2009; Chenhall & Langfield-Smith, 2007). In addition, new processes, initially developed for large organizations, should be transformed and implemented into PMSs in SMEs (Garengo, Biazzo, Simonetti, & Bernardi, 2005).

The examination of the more recent literature reveals certain key themes of performance management approaches in response to this new century dramatic environmental and market changes. The first key theme tends to underscore a trend towards emphasizing the dynamic nature of performance measurement and measures (Bisbe & Malagueño, 2012; Jakobsen, Nørreklit, & Mitchell, 2010; Srimai, Radford, & Wright, 2011). The second key theme highlights the importance of information and related systems to the performance measurement process (Bevanda, Sinkovic, & Currie, 2011; Taylor & Taylor, 2013). The third key theme focuses on the need for a strategic approach to the performance measurement effort (Aracıoğlu, Zalluhoğlu, & Candemir, 2013; Srimai et al., 2011).

The importance of the human factor to the effectiveness of the measurement process is also stressed in the literature (Franco-Santos, Lucianetti, & Bourne, 2012; Srimai et al., 2011; Tung, Baird, & Schoch, 2011). Overall, linking performance measurement and measures to continuous improvement efforts appear to be gaining more importance (Arzu Akyuz & Erman Erkan, 2010; Franco-Santos et al., 2012; Ho, Wu, & Wu, 2013).

METHODOLOGY

The research conducted in this study is survey-based. The manufacturing organizations included in this study represent several manufacturing industries in Portugal and Iran. The sample of the Portuguese organizations, as well as the sample of the Iranian organizations was drawn from reliable governmental databases. Two of the authors oversaw the collection of data and the procedures utilized in the collection process. The samples were drawn randomly from the targeted populations.

Instrument

The instrument utilized in this study consists of sixty-three (63) measures organized into eight categories pertaining to the different aspects of performance measures utilized in an organizational setting. This instrument, which is derived from the literature, has been used in different operational settings. For the purpose of this study, the emphasis is on forty-four (44) measures related to customers, employees, management, and social responsibility. The measures related to the financial category, which consists of nine measures, is averaged for the purpose of regression analysis. Similarly, the competitive environment category, consisting of nine measures is also averaged for the purpose of utilizing regression analysis.

For the same purpose, the average related to product quality and customer satisfaction, quality/independence of management, human resource management, and social responsibility are also obtained for the purpose of the regression analysis. Performance measures specific to operations are not included in this study, as they received much attention in the performance measurement literature. In this context, the emphasis of this study is on the softer aspects of organizational performance. As such, the extent of the utilization of these performance measures and their ranking as used by the studied organizations are explored in two unique business cultures being studied.

Sample and Data Analysis

For the purpose of this study a random sample of five hundred (500) medium to large sized firms was obtained from an official database of Portuguese manufacturing firms, with fifty (50) employees or more.

Sixty-nine (69) completed responses were received. In addition, a sample of medium to large-sized manufacturing firms which was obtained from the Iranian Ministry of Industry and Mines was used to collect the Iranian data. A cross-sectional sample of ninety-four (94) Iranian manufacturing organizations responded to the research instrument. This sample is representative of the population of medium to large manufacturing Iranian organizations. As such, the most relevant manufacturing sectors in both countries were represented in the overall study sample.

In the first phase of the data analysis, descriptive statistics, and the t-test were used to determine the existence of significant differences between the utilization of performance measures among Portuguese and Iranian executives. In the second phase of the data analysis, performance dimensions' reliability was verified. Later a stepwise regression procedure was used to investigate the relationship between the financial dimension, as dependent variable and the other four performance dimensions. These dimensions included Product Quality and Customer Satisfaction, Human Resource Management, and Social Responsibility. The same was done considering the competitive environment dimension as a dependent variable.

RESULTS

Extent of Utilization of Human Related Performance

According to the methodology section, Table 1 presents the performances measures that did not have significant differences $(\alpha = 0.05)$ in relation to the extent of the utilization by Portuguese and Iranian executives. The first column represents the performance measure and its category. The second column represents the average of the utilization of the performance measures. The third column represents the rank of these performance measures as utilized in Portugal. The fourth column represents the average of utilization of the performance measures in Iran. Finally, the fifth column represents the rank of the performance measures in Iran.

TABLE 1
MEASURES UTILIZATION WITH NO SIGNIFICANT DIFFERENCES BETWEEN PORTUGUESE AND IRANIAN MANUFACTURING ORGANIZATIONS

Performance Measures	Portugal		Iran	
	Average	Rank	Average	Rank
Financial Measures				
Return on Equity	3.75	10	3.56	11
Equity/Total Assets	3.62	11	3.42	16
Return on Assets	3.58	13	3.47	12
Sales/Total Assets	3.22	31	3.38	18
Product Quality and Customer Satisfaction				
Customer Surveys	3.54	18	3.63	6
Warranty Claims	3.45	21	3.17	29
Litigations with customers	2.95	35	2.80	39
Service Responsiveness	3.43	23	3.36	20
Quality/Independence of Management				
Experience/Reputation of Management	3.57	14	3.77	2
Continuity of Management	3.52	19	3.17	28
Ethical Behavior of Management	3.45	20	3.71	4
Competitive Environment				
Customer Diversification	3.57	15	3.61	9
Product Diversification	3.39	27	3.15	30
Brand Awareness	3.37	28	3.32	21
Market Share	3.27	30	3.24	26
Geographic Diversification	2.99	34	3.30	22
Strategic Alliances	2.45	40	2.65	41
Human Resource Management				
Equal Employment Opportunity	3.55	16	3.26	23
Employee Involvement	3.54	17	3.43	15
Labour-Management Relations	3.40	25	3.37	19
Employee Turnover	3.09	33	3.25	24
Social Responsibility				
Community Involvement	3.16	32	2.92	36
Litigation with the community	2.24	41	2.58	43

$\alpha = 0.05$

The results tend to suggest that executives of both countries are sharing the utilization of more than half of the performance measures. These performance measures appear to be proportionally distributed throughout all of the performance dimensions studied.

Although no significant differences were found between the performance measures included in Table 1, three interesting results can be noted. First, the top nine performance measures used by Portuguese executives were not included in Table 1. Second, four of the top ten performance measures used by

Iranian executives, are found in Table 1. These include **experience/reputation of management, customer diversification, customer surveys, and ethical behavior of management.** Third, at the bottom of Table 1, the **litigation performance measures** for both countries were found, along with **strategic alliances.**

Examining Table 2, the results reveal significant differences among twenty-one performance measures. As in the case of Table 1, these measures are proportionally distributed throughout all the performance dimensions. The significant differences found between the performance measures found in Table 2 are noted as they represent some interesting results.

TABLE 2

MEASURES UTILIZATION WITH SIGNIFICANT DIFFERENCES BETWEEN PORTUGUESE AND IRANIAN MANUFACTURING ORGANIZATIONS

Performance Measure	Portugal		Iran	
	Average	Rank	Average	Rank
Financial				
Sales	4.87	1	4.28	1
Cash Flow	4.28	2	3.45	13
EBIT&EI/Sales	4.26	3	3.63	7
Quality of Accounting Policies	3.79	8	3.20	27
Earnings Per Share	3.28	29	3.77	3
Product Quality and Customer Satisfaction				
Customer Complaints	3.93	7	3.14	31
Percent of missed delay dates	3.79	9	2.99	34
Percent of returned orders	3.44	22	2.93	35
Quality/Independence of Management				
Participation of Shareholders on the Firm's Management	3.40	26	2.72	40
Independence of the management relatively to stakeholders	2.64	39	3.14	32
Dispersion of Ownership	2.08	42	2.58	42
Shareholder Disputes	1.80	43	2.83	38
Competitive Environment				
Percent of Sales from Proprietary Products	3.43	24	3.02	33
Potential for new competitors	2.86	37	3.44	14
Litigation Due to Break of Market Competition Rules	1.66	44	2.14	44
Human Resource Management				
Safety Record	4.16	4	3.62	8
Absentee rate	3.97	5	3.24	25
Employee Training	3.93	6	3.57	10
Profit share or other incentive plans	2.88	36	3.40	17
Insurance plans (life. health and education)	2.84	38	3.67	5
Social Responsibility				
Environmental policies implemented	3.59	12	2.91	37

$\alpha = 0.05$

First, the nine most used performance measures by Portuguese executives are significantly higher than the same performance measures used by Iranian executives. In this group, only the first most used measure (sales) has the same rank for both countries. On the other hand, substantial differences in the ranking of performance measures can be found. These include the **percent of missed delay dates (9-39), customer complaints (7-31), quality of accounting policies (8-27), and absentee rates (5-25).**

Second, at the bottom of Table 2, the three performance measures that Iranian executives tend to use with significantly more frequency than the Portuguese executives are found. These include **dispersion of ownership, shareholder disputes, litigation due to break of market competition.** However, overall these three performance measures are not used often in both countries relative to other performance measures.

Third, the following four performance measures used by Iranian executives are significantly higher than the same performance measures used by Portuguese executives. These include **profit share or other incentive plans, potential for new competitors, insurance plans (life. health and education), and independence of the management relatively to the shareholders.** It is interesting to note that the values assigned by Portuguese executives are below three, which indicates the overall low utilization. On the other hand, these performance measures tended to be the three most used by Iranian executives.

Regression Results

According to the methodology presented before, the reliability of all the performance dimensions was tested (Table 3). Very good results were obtained for all dimensions of the Portuguese data. The results of the Iranian data were good with an exception of **quality/independence of management.** The results in Table 3 show that the **financial** dimension is the performance dimension most used by executives in both countries. For the less used performance dimensions, the choices of the executives in both countries were different. On one hand, Portuguese executives chose **quality/independence of management,** as the least used dimension. On the other hand, the Iranian executives chose **social responsibility** as the least used dimension (See Table 3).

TABLE 3
RELIABILITY RESULTS RELATED TO PORTUGUESE AND IRANIAN PERFORMANCE DIMENSION

Performance Dimensions	Portugal		Iran	
	Average	Alfa	Average	Alfa
FIN – Financial	3.86	0.817	3.55	0.752
PQCS - Product Quality and Customer Satisfaction	3.48	0.848	3.19	0.810
COE - Competitive Environment	3.00	0.850	3.07	0.688
Q/IM - Quality/Independence of Management	2.90	0.801	3.14	0.574
HRM - Human Resource Management	3.49	0.802	3.46	0.798
SR- Social Responsibility	2.99	0.779	2.80	0.663

When examining the regression results pertaining to the extent of utilization of financial performance as a dependent variable, Table 4 shows that Portuguese executives tended to only use the utilization of the human resource management performance measures, as independent variable.

TABLE 4
REGRESSION RESULTS RELATED TO PORTUGUESE MANUFACTURING ORGANIZATIONS

	R	R^2	Adjusted R^2		Std. Error of Estimate
	0.414	0.171	0.158		0.67648
	Unstandard. Coefficients		Standard. Coeffic.		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.397	0.405		5.919	0.000
HRM	0.414	0.114	0.414	3.637	0.001

Dependent variable: Financial Performance.
HRM- Human Resource Management.

Based on Table 5, Iranian executives also tended to only associate the extent of utilization of the human resource management performance measures with the extent of utilization of financial performance as a dependent variable.

TABLE 5
REGRESSION RESULTS RELATED TO IRANIAN MANUFACTURING ORGANIZATIONS

	R	R^2	Adjusted R^2	Std. Error of Estimate	
	0.427	0.183	0.173	0.57231	
	Unstandard. Coefficients		Standard. Coeffic.		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.280	0.308		7.396	0.000
HRM	0.386	0.089	0.427	4.331	0.000

Dependent variable: Financial Performance.
HRM- Human Resource Management.

When examining the regression analysis results pertaining to the utilization of competitive environmental measures, Table 6 shows the results for Portuguese executives. The extent of utilization of the **quality/independence of management** measures, along with **social responsibility** measures tended to explain the extent of the utilization of the competitive environment performance.

TABLE 6
REGRESSION FOR COMPETITIVE ENVIRONMENT CATEGORY RESULTS RELATED TO PORTUGUESE MANUFACTURING ORGANIZATIONS

	R	R^2	Adjusted R^2	Std. Error of Estimate	
	0.602	0.362	0.342	0.66219	
	Unstandard. Coefficients		Standard. Coeffic.		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.221	0.316		3.867	0.000
QIM	0.369	0.107	0.399	3.452	0.001
SR	0.232	0.089	0.299	2.591	0.012

Dependent variable: Financial Performance.
QIM - Quality/Independence of Management.
SR- Social Responsibility.

Table 7 shows the regression results for Iranian executives. In this case, the extent of utilization of customer related performance measures tended to explain the variation in the utilization of the competitive performance.

TABLE 7
REGRESSION FOR COMPETITIVE ENVIRONMENT RESULTS RELATED TO IRANIAN MANUFACTURING ORGANIZATIONS

	R	R^2	Adjusted R^2	Std. Error of Estimate	
	0.308	0.095	0.084	0.54839	
	Unstandard. Coefficients		Standard. Coeffic.		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.407	0.244		9.850	0.000
PQCS	0.225	0.076	0.308	2.964	0.004

Dependent variable: Financial Performance.
PQCS- Product Quality and Customer Satisfaction.

CONCLUDING REMARKS

Based on the results of this study, the following conclusions are in order. First, the Portuguese and Iranian manufacturing organizations represented by their executives showed significant similarities in the extent of utilization or non-operational performance measures. However, there were notable differences in ranking of these performance measures. For example, while no significance was detected in terms of the average utilization of the experience/representation of management, Iranian executives ranked this performance measure second. On the other hand, Portuguese executives ranked the same measure fourteen. Customer diversification in another example, Iranian executives ranked it as number nine. However, Portuguese executives ranked it as number fifty. This indicates that the pattern of use is perhaps

similar, but the relative importance (rank) is different among these two groups of executives. This could be attributed to cultural differences and/or economic realities.

Second, despite some disagreements, especially in terms of the ranking of some performance measures, the agreement was far more than the disagreement. Perhaps this is attributed to the similarity in customer demands and the competitive pressures. An example of such performance measures is "warranty claims," and service responsiveness.

Third, some significant differences were detected in the extent of utilization and the rank of the measures among the two groups of executives. Safety record represents a case in point. The Portuguese executives significantly utilized this performance measure more than their Iranian counterparts. Environmental policies are another example where the Portuguese outperformed their Iranian counterparts, both in terms of the weight and rank given to this performance measure. Customer complaints is yet another example in the same direction. Absentee rate tended to be more important to Portuguese executives than their Iranian counterparts.

Fourth, both executives appeared to pay attention to the human capital, as an important contributor to the utilization of the financial dimension of performance. However, Iranians linked customer satisfaction to utilization of competitive environment of performance dimension. On the other hand the Portuguese executives linked social responsibility to the utilization of the competitive environmental dimension.

Overall, it appears that the level of maturity of Portuguese manufacturing organizations and their global sophistication tend to surpass their Iranian counterparts. This could be attributed to the many years of forced isolation through economic embargos placed on Iran. However, the Iranian organizations appear to be aware of their potential and they are gearing themselves to compete globally. In fact, these organizations in some performance areas are giving more attention to some key competitive performance measures than their Portuguese counterparts.

Finally, the fact that both business cultures, despite their economic limitations, are aware of the role of the human aspects of performance is indeed very encouraging. They appear to understand that competitive performance in a highly demanding global environment means that they must utilize broader organizational performance measures. This is a clear departure from the more efficiency only orientation of the near past. Despite their economic conditions and some traditional elements of their cultures the studied organizations appear to be on their way toward becoming a customer-oriented open operational system. In such open systems, the human element is the engine that makes the productive technology paves the road toward a financial and competitive effectiveness.

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